CLAIMS

1. A probe (S) for extracting gases from a process environment comprising a tubular element (2), which can be positioned within the interior of the process environment, the said tubular element having at one end a gas aspiration opening (TS) and defining an internal cavity (CA) by which the said process environment can be put into fluid communication with a gas take off system, characterised in that it further includes injection means (1) coupled to the first tubular element (2), operable to inject the said gaseous fluid into the interior of the cavity (CA) accelerated towards the said aspiration opening of the first tubular element (2) and from there again into the process environment.

2. A probe according to Claim 1, in which the said injection means comprise a second tubular element (1) extending within the cavity (CA) of the first tubular element (2), formed in such a way as to be able to inject the said accelerated gaseous fluid towards the said aspiration opening of the first tubular element (2) and from there again to the process environment.

3. A probe according to Claim 2, in which the end of the second tubular element (1) disposed on the side of the aspiration opening, that is to say the process environment side, is provided with a nozzle (UG).

4. A probe according to Claim 1 or 2, in which the said first (2) and second (1) tubular element are coaxial.

5. A probe according to Claim 4, including connector elements (CR,T), pierced nuts (DT) and gas tight seals operable to assemble the said first (2) and second (1) tubular element and to render the second tubular element (1) slidable with respect to the first tubular element (2).

6. A probe according to any preceding claim, further including a cooling jacket (CRA) disposed around the said first tubular element (2).

7. A probe according to Claim 6, in which the said cooling jacket is disposed in such a way as to define an inter space (IN) interposed between the said jacket and the first said tubular element (2).

8. A probe according to Claim 6 or 7, in which the said cooling jacket is assembled in a separable manner from the said first tubular element (2) of the probe (S).

9. A probe according to any of Claims from 6 to 8, in which the said cooling jacket is connected in fluid communication with a low temperature refrigerator with a closed fluid circuit.

10. A probe according to any preceding claim, further including a shielding element (CP) disposed in proximity to the said aspiration opening (TS).

11. A system for extracting gases from a process environment, which can be coupled to a probe according to any preceding claim, comprising means (40, C) for aspirating the gas from the process environment through the said first tubular element (2) of the probe (S), characterised in that

it further includes means (50, C) for re-injecting the said gas into the probe/process environment, disposed in fluid communication with the said injection means (1) of the probe (S).

12. The system according to Claim 11, in which the said means for aspirating the gas (40, C) and the said means for re-injecting the gas (50, C) comprise a common continuous cycle machine (C) operable to aspirate, compress and inject the said gas back into the same process environment, that is to say to confer pressure and kinetic energy on the gas.

13. A system according to Claim 12, further including a reservoir (S2G) disposed in the delivery of the said continuous cycle machine (C) for stabilising the pressure in the said injection means (1) of the probe (S) and for obtaining a rapid discharge of the gas cyclically for counter-current cleaning of the said first tubular element (2) of the probe (S), that is to say to effect back washing.

14. A system according to Claims 11 to 13, further including control means (EV1G, EV2G), operatively connected to the said means for aspirating the gas (40, C) and the said means for re-injecting the gas (50, C) for effecting probe cleaning cyclically, and continuously with the same process gas.

15. A system according to any of Claims 11 to 14, further including take off means (41, PM) connected to the said aspiration means (40, C) for taking off a fraction of the said gas, the said take off means being further connected to analyser means (O2-CO-NOX) for analysis of the said gas.

16. A system according to any of Claims 11 to 15, further including decanter means (D) disposed downstream of the probe (S) in such a way as further to reduce the dust in the said gas.

17. A system according to any of Claims 11 to 16, further including a vacuometer (Vg) connected to the first tubular element (2) of the probe (S) and a manometer (Mg) connected to the injection means (1) of the probe (S) for monitoring the operation conditions of the probe.